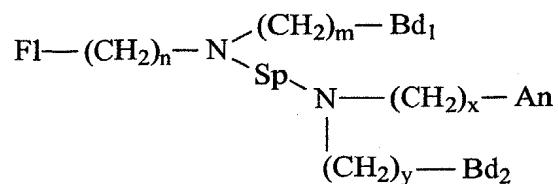


Abstract

Disclosed is a modular fluorescence sensor having the following general formula:

5



Where Fl is a fluorophore, N is a nitrogen atom, Bd_1 and Bd_2 are independently selected binding groups, Sp is an aliphatic spacer, and An is an anchor group for attaching the sensor to solid substrates. $n = 1$ or 2 , $m = 1$ or 2 , x is an integer, and $y = 1$ or 2 . The binding groups are capable of binding an analyte molecule to form a stable 1:1 complex. In a preferred embodiment, the Bd_1 is $\text{R}_1\text{-B(OH)}_2$ and Bd_2 is $\text{R}_2\text{-B(OH)}_2$. R_1 and R_2 are aliphatic or aromatic functional groups selected independently from each other and B is a boron atom. The present invention also provides methods of synthesizing a modular fluorescence sensor and its use in labeling solid substrates.